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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,271	10/02/2003	Brian Johnston	0818.0173C	3447
27896	7590	05/03/2006	EXAMINER	
EDEL, SHAPIRO & FINNAN, LLC 1901 RESEARCH BOULEVARD SUITE 400 ROCKVILLE, MD 20850			DEL SOLE, JOSEPH S	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/676,271

Applicant(s)

JOHNSTON ET AL.

Examiner

Joseph S. Del Sole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21, 42 and 43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21, 42 and 43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/8/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: **a)** at page 12, line 10 the specification mentions that feature 303 can be found in Figure 6 however no such reference numeral is found.

Appropriate correction is required.

### ***Claim Objections***

2. Claim 12 is objected to because of the following informalities: **a)** at line 3 of claim 12, "includes a grooved sections" should be changed to --includes grooved sections--.
- Appropriate correction is required.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 303 (as mentioned in page 12, line 10. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because a) the lines, numbers and letters are not uniform, clean and well defined (of a generally poor quality) in each of the 6 figures (37 CFR 1.84(l)). Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation in claim 1 "disposed downstream from the metering pump.... to deliver the molten polymer to a spinneret;" is vague and indefinite and appears to be incomplete because it is unclear what structural feature is represented as being "disposed downstream", "aligned to receive" and "to deliver".

Claim 18 is vague and indefinite because there is insufficient antecedent basis for "the temperature control system of claim 15". It is further unclear whether claim 18 includes all, or only part, of the limitations of parent claims 15 and 1.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 6-7, 9-10, 13-18 and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Barbier et al (6,164,950).

Barbier et al teaches a temperature control system having

claim 1: a plurality of metering pump assemblies including inlets to receive a plurality of molten streams from a source (Fig 4a, the delivery units to #s 12, 13, 14 and 15)

disposed downstream from the metering pump assemblies and aligned to receive molten material from the metering pump to deliver the molten material to the spinneret (Fig 4a, #s 12, 13, 14 and 15);

wherein the flow paths are arranged in flow path sets and each flow path set includes at least one flow path and is spaced a selected distance from the other flow path sets so as to facilitate independent control of the temperature of a molten material flowing through each set (Fig 4a and col 5, lines 15-46);

claim 2: each flow path set includes a plurality of flow paths, and each metering pump assembly includes an inlet to receive a molten material stream from a source and a plurality of outlets to direct molten material to the flow paths for a respective flow path set (Fig 1a);

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claim 3: insulation material disposed between the flow path sets (Fig 3a);

claim 4: the at least one flow path set includes a thermal treatment unit to independently maintain molten polymer flowing through the at least one flow path set within a selected temperature range (col 5, liens 15-46);

claim 6: the flow paths have conduits disposed within a chamber (Figs 1a and 4a);

claim 7: the chamber includes insulation material surrounding the conduits;

claim 9: the chamber is partitioned into a plurality of sub-chambers, and the flow path sets are disposed in separate sub-chambers (Figs 1a and 4a);

claim 10: each sub-chamber includes a heat treatment unit to independently maintain molten polymer flowing through each sub chamber within a selected temperature range (Figs 1a and 4a and col 4, line 30 - col 5, line 11);

claim 13: the flow paths have channels extending through portions of a pump block (Figs 1a and 4a);

claim 14: the pump block is partitioned into a plurality of sub-sections via at least one insulation material, and the flow path sets are disposed in separate sub-chambers (Figs 1a and 4a);

claim 15: a spin pack including the spinneret (Fig 4a) and a spin beam including a thermal treatment unit to heat the spin beam and spin pack (Fig 4a, #9);

claim 16: the chamber includes insulation material surrounding the conduits and disposed between the flow path sets to partition flow path sets into a plurality of sub-sections;

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claim 17: the spin pack is partitioned into sub-sections via the insulation material (Fig 4a);

Claim 18: a spunbond fiber extrusion system.

The Examiner notes that the limitation "increases by no more than about 50% of the difference between the spin beam temperature and an inlet temperature of the molten polymer stream" is a process limitation and that the cited art is capable of performing this process.

8. Claims 1-11, 13-19 and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Uraya et al (3,659,989).

Uraya et al teaches a temperature control system having

claim 1: a plurality of metering pump assemblies including inlets to receive a plurality of molten streams from a source (Fig 2, the delivery units to #s 3 and 3' and col 6, lines 19-35)

disposed downstream from the metering pump assemblies and aligned to receive molten material from the metering pump to deliver the molten material to the spinneret (Fig 2);

wherein the flow paths are arranged in flow path sets and each flow path set includes at least one flow path and is spaced a selected distance from the other flow path sets so as to facilitate independent control of the temperature of a molten material flowing through each set (col 6, lines 35-50);

claim 2: each flow path set includes a plurality of flow paths, and each metering pump assembly includes an inlet to receive a molten material stream from a source and

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a plurality of outlets to direct molten material to the flow paths for a respective flow path set (Figs 2-8);

claim 3: insulation material disposed between the flow path sets (Fig 2, #s 8 and 9);

claim 4: the at least one flow path set includes a thermal treatment unit to independently maintain molten polymer flowing through the at least one flow path set within a selected temperature range (col 6, lines 48-66);

claim 5: at least one flow path set includes at least one sensor to measure at least one temperature and pressure of molten polymer (col 7, lines 3-52);

claim 6: the flow paths have conduits disposed within a chamber (Figs 4 and 6);

claim 7: the chamber includes insulation material surrounding the conduits (Fig 2, #s 8 and 9);

claim 8: the insulation material is glass beads (col 6, lines 35-43);

claim 9: the chamber is partitioned into a plurality of sub-chambers, and the flow path sets are disposed in separate sub-chambers (Fig 2);

claim 10: each sub-chamber includes a heat treatment unit to independently maintain molten polymer flowing through each sub chamber within a selected temperature range (col 6, lines 35-65);

claim 11: the heat treatment unit for at least one sub-chamber has an inlet and an outlet to the sub-chamber, and the inlet is securable to a thermal supply source to facilitate delivery of a temperature-controlled fluid into and out of the sub-chamber (col 6, lines 65-71);



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claim 13: the flow paths have channels extending through portions of a pump block (Fig 2);

claim 14: the pump block is partitioned into a plurality of sub-sections via at least one insulation material, and the flow path sets are disposed in separate sub-chambers (Fig 2);

claim 15: a spin pack including the spinneret (Fig 2) and a spin beam including a thermal treatment unit to heat the spin beam and spin pack;

claim 16: the chamber includes insulation material surrounding the conduits and disposed between the flow path sets to partition flow path sets into a plurality of sub-sections (Fig 2, #s 8 and 9);

claim 17: the spin pack is partitioned into sub-sections via the insulation material (Fig 2);

claim 18: a spunbond fiber extrusion system;

claim 19: wherein each metering pump assembly includes a pump chamber and a pump disposed within the pump chamber (col 6, line 24).

The Examiner notes that the limitation "increases by no more than about 50% of the difference between the spin beam temperature and an inlet temperature of the molten polymer stream" is a process limitation and that the cited art is capable of performing this process.

9. Claims 1-4, 6-21 and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Moderlak et al (4,437,827).

Moderlak et al teaches a temperature control system having

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claim 1: a plurality of metering pump assemblies including inlets to receive a plurality of molten streams from a source (Fig 2, #14)

disposed downstream from the metering pump assemblies and aligned to receive molten material from the metering pump to deliver the molten material to the spinneret (Fig 1, #20);

wherein the flow paths are arranged in flow path sets and each flow path set includes at least one flow path and is spaced a selected distance from the other flow path sets so as to facilitate independent control of the temperature of a molten material flowing through each set (col 3, lines 1-33);

claim 2: each flow path set includes a plurality of flow paths, and each metering pump assembly includes an inlet to receive a molten material stream from a source and a plurality of outlets to direct molten material to the flow paths for a respective flow path set (Figs 1 and 2);

claim 3: insulation material disposed between the flow path sets (col 3, line 47);

claim 4: the at least one flow path set includes a thermal treatment unit to independently maintain molten polymer flowing through the at least one flow path set within a selected temperature range (Fig 2, #27 and col 2, lines 50-52);

claim 6: the flow paths have conduits disposed within a chamber (Fig 2);

claim 7: the chamber includes insulation material surrounding the conduits (col 3, line 47);

claim 9: the chamber is partitioned into a plurality of sub-chambers, and the flow path sets are disposed in separate sub-chambers (Figs 3-6);

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claim 10: each sub-chamber includes a heat treatment unit to independently maintain molten polymer flowing through each sub chamber within a selected temperature range (col 3, lines 50-52);

claim 11: the heat treatment unit for at least one sub-chamber has an inlet and an outlet to the sub-chamber, and the inlet is securable to a thermal supply source to facilitate delivery of a temperature-controlled fluid into and out of the sub-chamber (Fig 1, #s 25 and 26 and col 3, lines 50-52);

claim 12: the chamber is defined between a top plate disposed adjacent the metering pump assemblies and a bottom plate opposing the top plate, and the top plate further includes a grooved sections disposed at selected locations between metering pump assemblies (Fig 2);

claim 13: the flow paths have channels extending through portions of a pump block (Fig 2);

claim 14: the pump block is partitioned into a plurality of sub-sections via at least one insulation material, and the flow path sets are disposed in separate sub-chambers (Fig 2);

claim 15: a spin pack including the spinneret and a spin beam including a thermal treatment unit to heat the spin beam and spin pack (Figs 3-6);

claim 16: the chamber includes insulation material surrounding the conduits and disposed between the flow path sets to partition flow path sets into a plurality of sub-sections (col 3, line 47);

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claim 17: the spin pack is partitioned into sub-sections via the insulation material (Fig 2);

claim 18: a spunbond fiber extrusion system;

claim 19: wherein each metering pump assembly includes a pump chamber and a pump disposed within the pump chamber (Fig 2, #14);

claim 20: independent control of pumps (abstract and col 4, lines 40-52); and

claim 21: a pump chamber connected to a thermal fluid supply source to direct thermal fluid toward the pump (abstract and col 4, lines 40-52).

The Examiner notes that the limitation "increases by no more than about 50% of the difference between the spin beam temperature and an inlet temperature of the molten polymer stream" is a process limitation and that the cited art is capable of performing this process.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over either of Barbier et al (6,164,950) and Moderlak et al (4,437,827) in view of either Andersen et al (5,705,203) or Kromrey (5,009,687).

Barbier et al and Moderlak et al teach the invention as set forth above including the use of a solid insulation material.

Barbier et al and Moderlak et al fail to set forth the specific solid material used for insulation and specifically fails to teach glass beads.

Kromrey teaches the use of glass beads in a molding apparatus for the purpose of providing excellent insulation (col 5, lines 35-60). Andersen et al (5,705,203) teaches glass beads as an insulator in a molding apparatus for the purpose of providing a combination of higher insulation and lightweight (col 13, lines 45-55).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the inventions of either Barbier et al or Moderlak et al using glass beads as the solid insulation material as taught by either of Kromrey or Andersen et al because the material provides excellent insulation while also being lightweight.

14. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uraya et al (3,659,989) in view of Moderlak et al (4,437,827).

Uraya et al teach the apparatus as discussed above.

Uraya et al fail to explicitly teach

claim 20: at least one pump includes a heating element to independently maintain the pump within a selected temperature or

claim 21: at least one pump chamber includes a supply conduit securable to a thermal fluid supply source to direct thermal fluid toward the pump within the pump chamber in order to independently maintain the pump with a selected temperature range.

Moderlak et al teach the independent control of pumps, each having their own heating elements and a pump chamber connected to a thermal fluid supply source to direct thermal fluid toward the pump for the purpose of ensuring that the pumping units are separately in heat exchange with heatable chambers of the proper temperature (abstract and col 4, lines 40-52).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Uraya et al with

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independently controllable temperatures of the pumps as taught by Moderlak et al because such independent control enables a greater range of different materials to be pumped simultaneously through different pumps of the same spinneret.

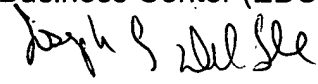
***References of Interest***

15. Leffew et al (6,409,491), Schafer (6,083,432), Kellert et al (5,268,132) and Flakne (3,864,068) are cited of interest to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (571) 272-1130. The examiner can normally be reached on M-F 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Joseph S. Del Sole